REMARKS

A. INTRODUCTION

The Final Office Action and Advisory Action have been received and carefully considered. Claims 1-18 are currently pending in the application. Claims 1 and 17 have been amended. A new claim 18 has been added. No new matter is added by this Amendment. Applicants believe that the application is now in condition for allowance and notice thereof is respectfully requested.

B. THE REJECTION UNDER 35 U.S.C. § 103

The Office Action rejects claims 1, 2-5, 10-13 and 15-17 under 35 U.S.C. §103(a) as being unpatentable over Nizzari *et al.* (US Patent 6,014,647, hereinafter "Nizzari") in view of Johnson *et al.* (US Patent 5,964,839, hereinafter "Johnson"). The Office Action also rejects claims 6, 8 and 14 under 35 U.S.C. §103(a) as being unpatentable over Nizzari in view of Johnson and Herz (US Patent 6,029,195, hereinafter "Herz"). The Office Action further rejects claims 7 and 9 under 35 U.S.C. §103(a) as being unpatentable over Nizzari in view of Johnson and further in view of alleged admissions by Applicants. These rejections are respectfully traversed as follows.

Under 35 U.S.C. § 103, the Patent Office bears the burden of establishing a *prima facie* case of obviousness. In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). The Patent Office can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of references. Id. Further, as stated in MPEP § 2143.03, to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA

1974). Applicants respectfully submit that the Examiner has not met the burden of proof in establishing the obviousness of the rejected claims 1-18.

Before discussing the claim rejections in detail, it is helpful to examine the general subject matters of the present invention and the cited references.

Applicants' invention, as recited in independent claims 1, 17 and 18, is directed to a system and method for interactive visual analysis of interactions among multiple entities. The entities are typically individuals or groups of individuals. According to embodiments of the present invention, interaction data among three or more entities may be collected in a number of ways (e.g., network surveys, e-mail traffic, telephone traffic and access to shared resources). The collected interaction data may be processed with connectivity and diversity measures in order to assess how well the entities are connected to their environments and to assess how diverse the entities are in their interactions with or connections to their environments. An environment for each entity typically comprise one or more other entities. The processed interaction data and/or appropriate raw data may be displayed to facilitate interaction analyses. In addition, either the connectivity measure or the diversity measure or both may be a recursive mathematical algorithm that employs a decay factor to account for the effects of indirect interactions among entities.

Nizzari discloses a method for processing transaction data related to direct interactions between a business and its customers. The interaction information are processed to produce personalized customer information that can be retrieved and used while interacting with the customer. Nizzari also provides a method for customized interaction processing. The structure of data stored the interaction database and rules are specified by meta data. In addition, Nizzari

provides a method for arranging references to stored interaction information in multiple disparate databases.

Johnson discloses a system and method for the monitoring and collection of all inbound/outbound information activity and communications activity at a particular user location. The real-time interaction between a user and an external information service is monitored and specific data are collected regarding that real-time interaction. For example, when a user is connected to a commercial information service (e.g., CompuServe or Prodigy) connectivity data (e.g., date/time of interactive session, number of packets sent/received, application file name) are collected. In addition, other substantive data (e.g., type of service, type and number of inquiries made, etc.) regarding the real-time interaction are collected. The information is collected in real-time, on an operation-by-operation basis, and is ultimately aggregated, for example, at the household level in a central location within the household. The aggregated data is thereafter transmitted to a central server for data analysis purposes. The information service provider can customize certain offerings based upon data collected from the user base.

Herz discloses a system for customized electronic identification of desirable objects, such as news articles, in an electronic media environment. A Herz system can automatically construct both a "target profile" for each target object in the electronic media based, for example, on the frequency with which each word appears in an article relative to its overall frequency of use in all articles, as well as a "target profile interest summary" for each user, which target profile interest summary describes the user's interest level in various types of target objects. The system then evaluates the target profiles against the users' target profile interest summaries to generate a user-customized rank ordered listing of target objects most likely to be of interest to each user so that the user can select from among these potentially relevant target objects, which were

automatically selected by this system from the plethora of target objects that are profiled on the electronic media.

The cited references (i.e., Nizzari, Johnson and Herz), individually or in combination, do not teach or suggest all the claimed elements in the present application.

First, the cited references do not disclose collecting interaction data "among three or more entities, wherein each entity is an individual or a group of individuals, and wherein at least two entities directly interact with multiple entities." Any two of the "three or more entities" might interact with each other and the aggregate effect may be a complex "web" of interactions.

In contrast, Nizzari is focused on direct, two-way interactions between a business and its customers. Nizzari, Figure 1, and col. 3, lines 33-53. *See also*, Nizzari, "Background of the Invention." Nizzari's data mining method produces personalized customer information that is used in later interaction with the customer. Nizzari, col. 1, line 67 - col. 2, line 4. Although the business may interact with multiple customers at the same time, such multiple interactions are strictly parallel with respect to one another. Nizzari does not reference or contemplate any interaction between any two customers. Apart from the business, there is no other entity in a Nizzari system that has multiple (i.e., two or more) interactions with other entities. One point of possible confusion may come from Nizzari's use of the terms "entity" and "relationships between entities." Nizzari, col. 5, line 64 - col. 6, line 32. It should be noted that these terms refer to data structures in a relational database and are not relevant to the subject matter of interest here.

Johnson fails to teach or suggest collecting interaction data "among three or more entities, ... , and wherein at least two entities directly interact with multiple entities" because Johnson is also limited to two-way interactions, here between an information service and its

users. In addition, the interacting entities in Johnson are computers rather than individuals or groups of individuals as claimed in the present application.

Herz does not deal with interactions among multiple entities at all.

Second, the cited references do not disclose processing said collected interaction data with connectivity and diversity measures. As recited in claims 1, 17 and 18, "connectivity" is a measure for assessing how well said entities are connected to their environments, and "diversity" is a measure for assessing how diverse said entities are in their interactions with or connections to their environments.

The Examiner recognizes in page 3 of the Final Office Action that "Nizzari et al fails to disclose wherein connectivity is a measure for assessing how well entities are connected to their environments an diversity is a measure for assessing how diverse entities are in their interactions with or connections to their environment." However, the Examiner points to Johnson as disclosing such connectivity and diversity "according to applicant's definition." This conclusion is flawed since it confuses the "data network connectivity" in Johnson with the "entity-environment connectivity" in the present invention. As clarified in the amended claims, an "environment" of each entity comprises at least one entity. Therefore, the "connectivity," as claimed in the present application, pertains to interactions among entities (i.e., individuals or groups). For example, a connectivity may measure how close an individual is connected with his or her colleagues and/or client contacts. In contrast, the connectivity data (e.g., date/time of interactive session, number of packets sent/received, application file name) that Johnson monitors are related to computer-to-computer interaction, such as a network connection between a household computer and a service provider's server. Johnson, Figure 1, and col. 3, lines 10-11.

Since Johnson only discloses data connectivity in the telecommunications context, it cannot render obvious the connectivity measure in human interactions context.

Third, claims 6, 8 and 18 also recite "a decay factor to account for the effects of indirect interactions among entities" that cannot be found nowhere in the cited references. The Final Office Action concedes, in page 12, that Nizzari and Johnson do not disclose a decay factor. The absence of a decay factor in these references serves to confirm the other distinctions discussed above. As stated above, Nizzari only deals with direct user-business interactions but not interactions among the users. Not concerned with any indirect interaction, Nizzari does not and need not use a decay factor to account for indirect interactions. The same is true with Johnson since it also deals only with direct interactions and does not even mention any indirect interactions.

However, the Examiner cites Herz as allegedly disclosing the decay factor. This allegation is stretching Herz out of its context. As admitted in the Final Office Action (page 13), Herz's decay factor is used for the purpose of calculating how much files are accessed instead of accounting for indirect interactions among entities. Despite the same phrase "decay factor," Herz has little, if anything, in common with the present invention.

Since a number of claim elements in the present application are not disclosed in the cited references, these references cannot render the claim invention obvious.

C. CONCLUSION

For at least the reasons provided above, Applicants respectfully submit that the application is in condition for allowance. Favorable reconsideration and allowance of the pending claims are respectfully solicited.

Should there be anything further required to place the application in better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below before issuance of any further office action.

In the event any additional fees are due, the Commissioner is hereby authorized to charge the undersigned's Deposit Account No. 50-0206.

Respectfully submitted,

HUNTON & WILLIAMS, LLP

By: _____
Ce Li
Registration No. L0214

Hunton & Williams, LLP
1900 K Street, N.W., Suite 1200
Washington, D.C. 20006-1109
Telephone (202) 955-1500
Facsimile (202) 778-2201

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